

# PATENT ABSTRACTS OF JAPAN

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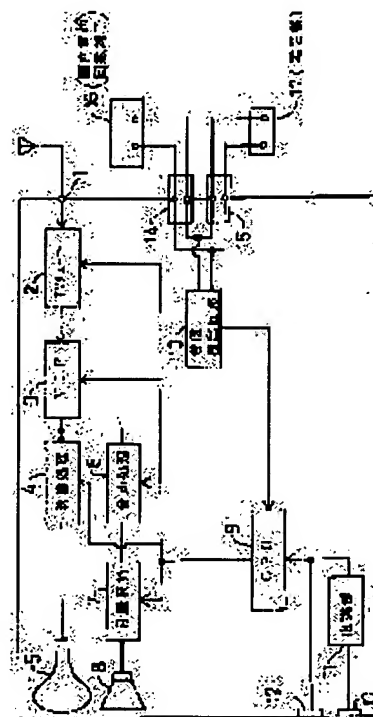
(72)Inventor : MAGAI KINYA

## (54) ELECTRONIC DEVICE

### (57)Abstract:

**PURPOSE:** To attain ease of speech by decreasing automatically the sound volume of the electronic device during talking.

**CONSTITUTION:** The subject electronic device such as a television receiver listening to an output audio signal is provided with an incoming call detection means 13 detecting the incoming call of a telephone call, sound volume control means 7, 9 controlling the sound volume of the output voice signal, and the sound volume control means 7, 9 are operated based on a detection output when the incoming call detection means 13 detects the arrival of the call to the telephone set so as to set the output voice signal to a prescribed level or below.



## LEGAL STATUS

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**CLAIMS**

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[Claim(s)]

[Claim 1] The electronic equipment carried out having constituted so that it has an arrival-of-the-mail detection means detect the arrival of a telephone, and the sound-volume control means which controls the sound volume of said output voice in the electronic equipment which hears output voice, said sound-volume control means operates based on a detection output when said arrival-of-the-mail detection means detects the arrival of a telephone and said output voice may be in the condition below predetermined level as the description.

[Claim 2] Said arrival-of-the-mail detection means is electronic equipment which is characterized by constituting so that an arrival-of-the-mail condition may be judged and which was indicated to claim 1 by detecting change of the electrical potential difference of the MOJURA terminal of the telephone line.

[Claim 3] Said arrival-of-the-mail detection means is electronic equipment which is characterized by constituting so that an arrival-of-the-mail condition may be judged and which was indicated to claim 1 by detecting the transmitted electric wave or arrival-of-the-mail electric wave of wireless type telephone.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to electronic equipment, such as a television receiver and a sound system.

[0002]

[Description of the Prior Art] Conventionally, electronic equipment, such as a television receiver, radio, a sound system, and a car stereo set, is made as [ operate / as an approach of adjusting the sound volume of the voice /, with a remote commander / it / perform volume actuation or ].

[0003]

[Problem(s) to be Solved by the Invention] Therefore, if a telephone call is got from outside while enjoying the voice of the time of viewing and listening to a program, for example with the television receiver, or a stereo unit, when using telephone in the same chamber, unless the user itself lowers sound volume, a telephone cannot be heard well. Then, in order to extract volume and to lower sound volume, even if it was necessary to move to the location of electronic equipment or to lower sound volume using a remote commander and lowered sound volume, when it was separated from electronic equipment or there was no remote commander at hand, time and effort was taken and it was trouble.

[0004]

[Means for Solving the Problem] This invention was made in view of such a trouble, and is equipped with an arrival-of-the-mail detection means detect the arrival of a telephone, and the sound-volume control means which can control the level of output voice, and the electronic equipment which constituted so that a sound-volume control means may operate and the output sound volume of electronic equipment may fall to predetermined level with the detection output when detecting the arrival of a telephone in an arrival-of-the-mail detection means provides. Moreover, when judging an arrival-of-the-mail condition by detecting change of the voltage level of the telephone line as an arrival-of-the-mail detection means or detecting the electric wave of wireless type telephone in the case of wireless type telephone, as an arrival-of-the-mail condition is judged, it can realize.

[0005]

[Function] Since it is constituted so that a sound-volume control means may work based on detection actuation of an arrival-of-the-mail detection means, if a message is received in a telephone, the sound volume of electronic equipment can be automatically lowered to extent by which a telephone is not hindered.

[0006]

[Example] The first example of this invention is explained using drawing 1 . Drawing 1 shows the block diagram in the case of performing arrival-of-the-mail detection using the telephone line, and lowering the sound volume of a television receiver. TV tuner as which 1 chooses an antenna terminal as and 2 chooses a broadcasting electric-wave in this drawing, In 3, an intermediate frequency amplifier and 4 the Braun tube and 6 for a video-signal processing amplifier and 5 The voice circuit processing section, CPU to which 7 performs control of actuation [ in / the volume control section and 8 and / in 9 / each

part of the above ], [ a loudspeaker ] The infrared light sensing portion in which 10 was prepared corresponding to the external remote commander, The control unit which formed the switch, as for 11, for a user to adjust the recovery section, and for 12 adjust a channel, sound volume, etc., In the arrival-of-the-mail detector where 13 is prepared in the television receiver of this example, and 14, a telephone-line input terminal and 15 point out the telephone with which a telephone-line output terminal and 16 are installed in an inside-of-a-house telephone-line terminal, and 17 is installed near the television receiver of this invention.

[0007] A video signal is processed by the video-signal processing amplifier 4 through the TV tuner 2 and the intermediate frequency amplifier 3, and a RGB signal is outputted to the Braun tube 5. After a sound signal is processed in the voice circuit processing section 5 through the TV tuner 2 and the intermediate frequency amplifier 3, it is outputted from a loudspeaker 8 through the volume control section 7. CPU9 controls various \*\*\*\*\* of the TV tuner 2, the intermediate frequency amplifier 3, the video-signal processing amplifier 4, the voice circuit processing section 6, and the volume control section 7 by the manipulate signal from the control unit 12 operated by the user, instruction code recovered from the remote commander in the recovery section 11 through the infrared light sensing portion 10. It connects between the telephone-line input terminal 14 and the telephone-line output terminal 15, and the arrival-of-the-mail detector 13 is made as [ detect / the voltage level in the telephone line ].

[0008] And when installing telephone, for example in this television receiver and the same room, the inside-of-a-house telephone-line terminal 16 and the telephone-line input terminal 14 of a television receiver are first connected to the appearance shown in drawing, and the telephone-line output terminal 15 and telephone 17 are further connected to it. Although it is about 40V at the time of on hook, the voltage level in the telephone line falls in about 5V at the time of off-hook, as already known. Using change of this voltage level, the arrival-of-the-mail detector 13 prepared between the telephone-line input terminal 14 and the telephone-line output terminal 15 detects the voltage level of the telephone line, and if a telephone finishes an arrival-of-the-mail detecting signal and a hook is placed when a message is received and a hook goes up, it will output an arrival-of-the-mail detection terminate signal to CPU9.

[0009] Therefore, by CPU's9 working and controlling the volume control section 7 by the arrival-of-the-mail detecting signal from the arrival-of-the-mail detector 13, if a telephone call is got while viewing and listening to the television receiver of this example, after the telephone which falls to predetermined level and is outputted from a loudspeaker 8 finishes a loudness level of sound, CPU9 works by the arrival-of-the-mail detection terminate signal from the arrival-of-the-mail detector 13, and a loudness level of sound returns to the sound volume before arrival of the mail.

[0010] Drawing 2 shows actuation when CPU9 of drawing 1 inputs an arrival-of-the-mail detecting signal. <F000> and the sound volume of a first current television receiver are remembered that CPU9 inputs an arrival-of-the-mail detecting signal from the arrival-of-the-mail detector 13 when a message is received and a hook goes up to an internal memory <F001>, <F002 to which the volume control section 7 is controlled after that, and sound volume is reduced to predetermined level>. Since an arrival-of-the-mail input terminate signal will be inputted from the arrival-of-the-mail detector 13 if a telephone finishes and a hook is placed, according to <F003> and this, the volume control section 7 is controlled again, namely, it returns to the original sound volume <F004>.

[0011] Thus, when CUP9 controls, it is prevented that the sound volume of a television receiver is too large, and becomes the obstacle of a call during a call. In addition, since it may be necessary to fall a loudness level of sound even when the telephone call has been got, the loudness level of sound has been enough reduced by a user's selection by forming a manual switch. Moreover, although the loudness level of sound controlled at the time of a call should just be set as the suitable level which does not become the hindrance of a call, considering, for example as a mute condition is also considered. Furthermore, a user may enable it to set the level at the time of a call as desired level beforehand.

[0012] Next, the second example is explained using drawing 3. Drawing 3 performs arrival-of-the-mail detection using the electric wave of wireless type telephone, and shows the block diagram in the case of

falling the loudness level of sound of a television receiver. In addition, the same sign as drawing 1 shows the same section among drawing. Carrier frequency amplifier and 22 point out a limiter and, as for 23, a wave detector and 7A point [ an arrival-of-the-mail detection antenna for 20 to detect a transmitted electric wave or an arrival-of-the-mail electric wave and 21 ] out voltage-controlled voice amplifier.

[0013] If the arrival-of-the-mail detection antenna 20 for detecting the transmitted electric wave or arrival-of-the-mail electric wave of wireless type telephone to a television receiver is installed, the call sound of a telephone sounds and an arrival-of-the-mail electric wave is detected, a gain control electrical potential difference will be supplied to voltage-controlled amplifier 7A from a wave detector 23, and it will enable it to fall the loudness level of sound of a television receiver to predetermined level through the carrier frequency amplifier 21 and a limiter 22 in this example. If a telephone finishes and an arrival-of-the-mail electric wave is no longer detected, supply of the gain control electrical potential difference from a wave detector 23 to voltage-controlled amplifier 7A will stop, and a loudness level of sound will return to the sound volume before arrival of the mail.

[0014] In addition, also in this example, since it may be necessary to fall a loudness level of sound even when the telephone call has been got, the loudness level of sound has been enough reduced by a user's selection by forming a manual switch. A voice sensor can also constitute for example, an arrival-of-the-mail detection means from a place. In this case, sound volume can be automatically lowered during a call like each above-mentioned example by constituting so that an arrival-of-the-mail detecting signal may be outputted, and carrying this in a television receiver or a remote commander with the call sound of telephone.

[0015]

[Effect of the Invention] As explained above, electronic equipment equipped with the arrival-of-the-mail detection means and sound-volume control means of this invention has the effectiveness of becoming easy to carry out a telephone in extent which is not noisy although talked, since sound volume falls automatically, when the telephone call has been got. Moreover, even when distance is separated from electronic equipment or there is no remote commander at hand, the time and effort which operates the user itself can be saved, and there is an advantage of appearing in a telephone early further as much as possible.

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**TECHNICAL FIELD**

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[Industrial Application] This invention relates to electronic equipment, such as a television receiver and a sound system.

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**PRIOR ART**

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[Description of the Prior Art] Conventionally, electronic equipment, such as a television receiver, radio, a sound system, and a car stereo set, is made as [ operate / as an approach of adjusting the sound volume of the voice /, with a remote commander / it / perform volume actuation or ].

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EFFECT OF THE INVENTION

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[Effect of the Invention] As explained above, electronic equipment equipped with the arrival-of-the-mail detection means and sound-volume control means of this invention has the effectiveness of becoming easy to carry out a telephone in extent which is not noisy although talked, since sound volume falls automatically, when the telephone call has been got. Moreover, even when distance is separated from electronic equipment or there is no remote commander at hand, the time and effort which operates the user itself can be saved, and there is an advantage of appearing in a telephone early further as much as possible.

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**TECHNICAL PROBLEM**

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[Problem(s) to be Solved by the Invention] Therefore, if a telephone call is got from outside while enjoying the voice of the time of viewing and listening to a program, for example with the television receiver, or a stereo unit, when using telephone in the same chamber, unless the user itself lowers sound volume, a telephone cannot be heard well. Then, in order to extract volume and to lower sound volume, even if it was necessary to move to the location of electronic equipment or to lower sound volume using a remote commander and lowered sound volume, when it was separated from electronic equipment or there was no remote commander at hand, time and effort was taken and it was trouble.

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MEANS

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[Means for Solving the Problem] This invention was made in view of such a trouble, and is equipped with an arrival-of-the-mail detection means detect the arrival of a telephone, and the sound-volume control means which can control the level of output voice, and the electronic equipment which constituted so that a sound-volume control means may operate and the output sound volume of electronic equipment may fall to predetermined level with the detection output when detecting the arrival of a telephone in an arrival-of-the-mail detection means provides. Moreover, when judging an arrival-of-the-mail condition by detecting change of the voltage level of the telephone line as an arrival-of-the-mail detection means or detecting the electric wave of wireless type telephone in the case of wireless type telephone, as an arrival-of-the-mail condition is judged, it can realize.

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**OPERATION**

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the first example of this invention.

[Drawing 2] It is the flow chart which showed actuation of CPU in the first example of this invention.

[Drawing 3] It is the block diagram of the second example of this invention.

[Description of Notations]

7 Volume Control Section

7A Electrical-potential-difference mold voice magnification machine

9 CPU

13 Arrival-of-the-Mail Detector

14 Telephone-Line Input Terminal

15 Telephone-Line Output Terminal

16 Inside-of-a-House Telephone-Line Terminal

17 Telephone

20 Arrival-of-the-Mail Detection Antenna


21 Carrier Frequency Amplifier

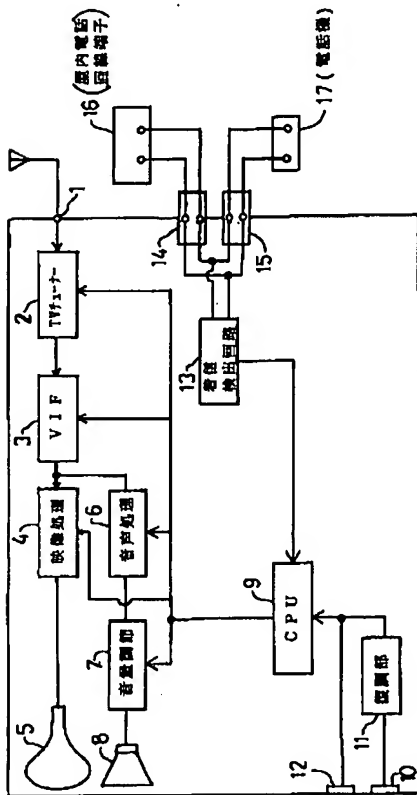
22 Limiter

23 Wave Detector

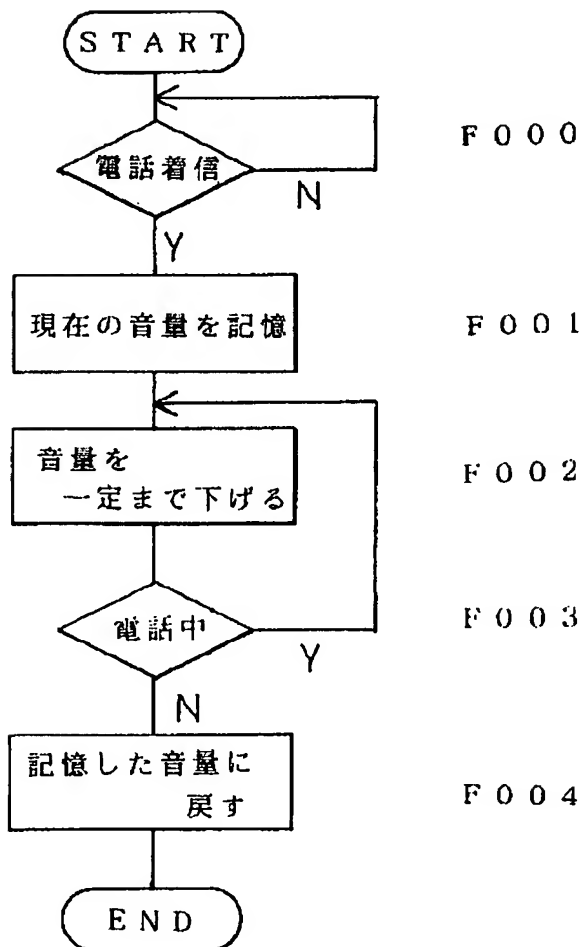
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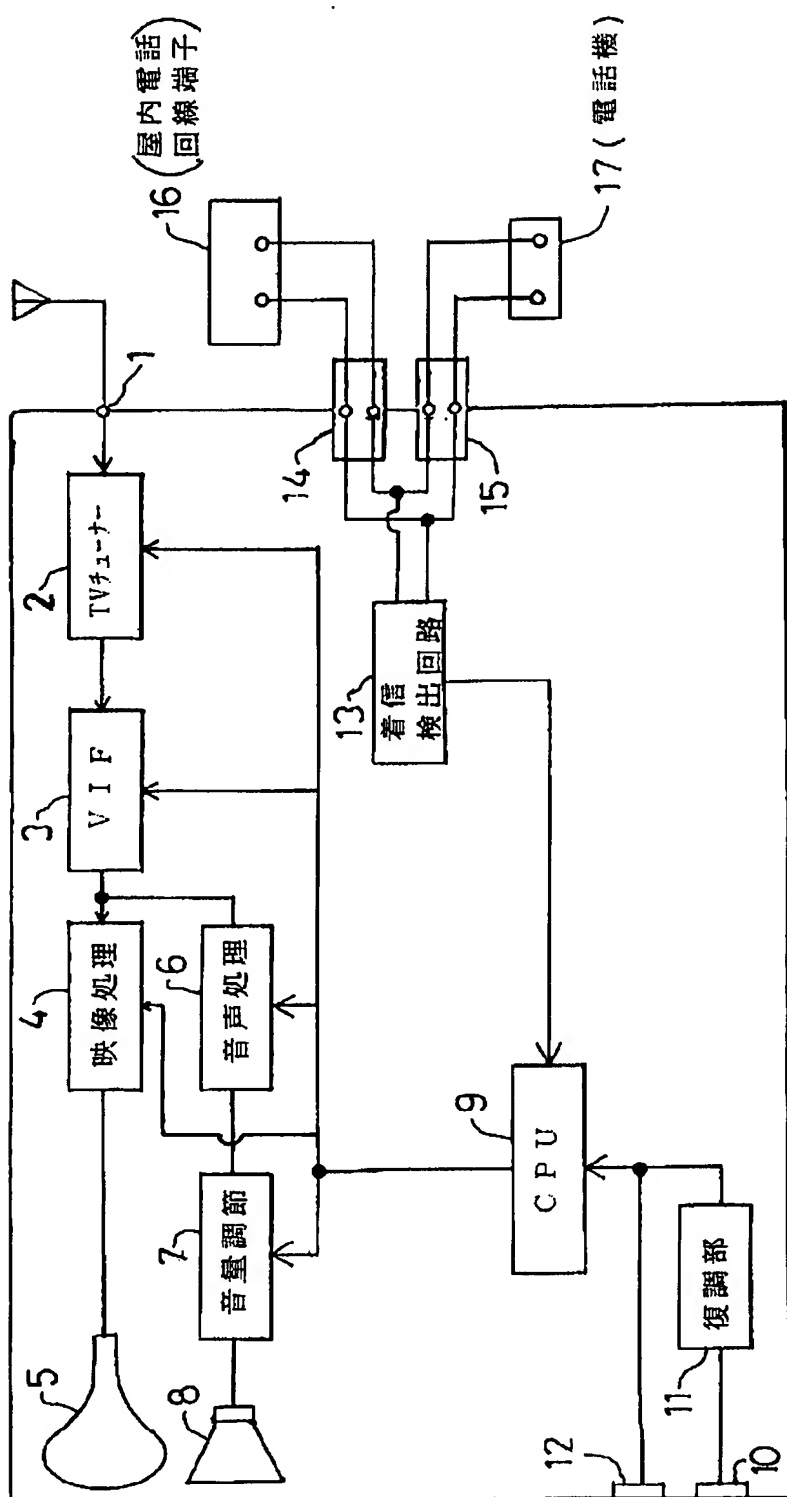
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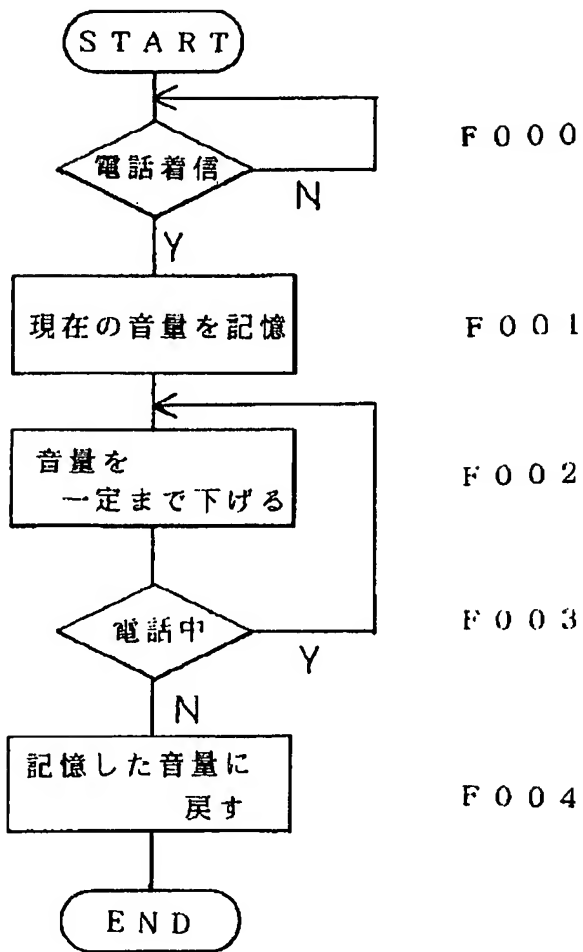
[Translation done.]

Drawing selection  

[Translation done.]



[Drawing 2]



[Drawing 3]

